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मानक

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“Step Out From the Old to the New”

IS 11075-2-1 (1984): Radio Frequency Connectors of BNC, TNC and UHF Series, Part 2: BNC Series, Section 1: Straight Plug, Male, Cabled, Type XXXX IS-01-01 to 04 and 50 to 53 [LITD 3: Electromechanical Components and Mechanical Structures for Electronic Equipment]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

SPECIFICATION FOR RADIO FREQUENCY CONNECTORS OF BNC, TNC AND UHF SERIES

PART 2 BNC SERIES

**Section 1 Straight Plug, Male, Cabled,
Type XXXX IS-01-01 to 04 and 50 to 53**

0. General — This standard shall be read in conjunction with IS : 11075 (Part 1)-1984 'Specification for radio frequency connectors of BNC, TNC and UHF series : Part 1 Test schedule and requirements'.

1. Type Designation — The types of connectors covered by this standard are designated [see 4.1 of IS : 11075 (Part 1)-1984] as given in Table 1.

TABLE 1 TYPES OF CONNECTORS

Type No.	Impedance	Applicable Cable	*Type of Usage Termination	Remarks
XXXX IS-01-01	50 Ω	R50-3-A03	Clamp	Professional
XXXX IS-01-02	50 Ω	R50-3-A02 R50-3-C47 R50-3-C48	Crimp	Professional
XXXX IS-01-03	75 Ω	R75-4-A12	Clamp	Professional
XXXX IS-01-04	75 Ω	R75-4-C56	Crimp	Professional
XXXX IS-01-50	50 Ω	R50-3-A03 R50-3-A02	Clamp	Consumer
XXXX IS-01-51	50 Ω	R50-3-C47 R50-3-C48	Crimp	Consumer
XXXX IS-01-52	75 Ω	R75-4-A12	Clamp	Consumer
XXXX IS-01-53	75 Ω	R75-4-C56	Crimp	Consumer

*The centre contact in case of all connectors shall be soldered. Terminology regarding the type of termination refers only to the method of connection of cable braid to connector outer contact.

2. Outline and Dimensions — The outline and dimensions shall be according to Fig. 1.

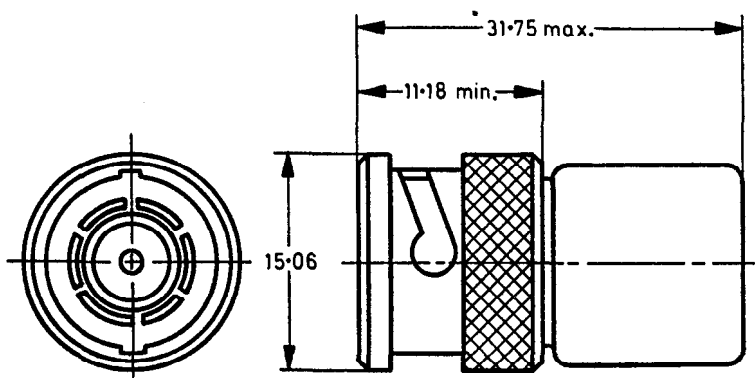


FIG. 1 OUTLINE AND DIMENSIONS

3. Mating Interface Dimensions — See Fig. 1 of IS : 11075 (Part 1)-1984 for mating interface dimensions.

4. Material, Finish and Life — As given below :

a) *Material*

- i) *Body* — Leaded brass conforming to IS : 319-1974 'Specification for free cutting bars, rods and sections (third revision)' or IS : 531-1971 'Specification for leaded brass strip for instrument parts (second revision)'

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- ii) *Coupling bush* — Leaded brass for professional grade and plastic for consumer grade
 - iii) *Centre contact* — Leaded brass conforming to IS : 319-1974 (*third revision*) or IS : 531-1971 (*second revision*)
 - iv) *Insulation material* — PTFE for professional grade and thermosetting polystyrene for consumer grade
 - v) *Gaskets* — For professional grade — Silicone rubber
For consumer grade — Neoprene rubber
- b) *Finish*
- i) For professional grade
 - 1) Centre contact — $1.27 \mu\text{m}$ (*Min*) gold plated over
 $5 \mu\text{m}$ (*Min*) nickel or copper under plate
 - 2) Other metal parts — $5 \mu\text{m}$ (*Min*) silver or nickel plated.
Braid clamps shall be silver plated $5 \mu\text{m}$ (*Min*)
 - ii) For consumer grade
All metal parts minimum silver or nickel plated, except centre contact and braid clamp to be, silver plated $5 \mu\text{m}$ (*Min*)
- c) *Mechanical Life*
500 mating cycles for pairs

5. Climatic Category

- a) *Temperature severity*
- i) For professional grade — 65° to $+85^{\circ}\text{C}$
 - ii) For consumer grade — -10°C to $+70^{\circ}\text{C}$

6. Mating Characteristics

- a) *Contact with spring members* — All slotted members shall contact a 8.23 mm minimum diameter ring within 0.79 mm of their tip ends.
- b) *Outer contact*
- i) Single ring *ID* — 8.1 mm (*Max*)
 - ii) Test ring finish — $0.4 \mu\text{m}$
 - iii) Insertion force — 22.25 N (*Max*) and
 4.45 (*Min*) when inserted to a depth of 2.36 mm (*Min*)

7. Mechanical Characteristics

- a) Engagement and disengagement force
- i) Longitudinal force — 22.25 N (*Max*)
 4.45 N (*Min*)
 - ii) Torque — 283 mm (*Max*)
- b) Centre contact retention force : Not applicable
- c) Cable retention force
- i) Non-crimp assemblies — 178 N (*Min*)
 - ii) Crimp assemblies
 - 45 N (*Min*) for cables 3.94 mm to 4.80 mm OD
 - 90 N (*Min*) for cables 4.81 mm to 5.82 mm OD
 - 135 N (*Min*) for cables 5.83 mm to 6.3 mm OD
 - 180 N (*Min*) for cables 6.34 mm OD and larger.
- d) Coupling Mechanism retention force — 445 N (*Min*)

8. Electrical Characteristics

- a) Corona
 - i) Corona level — 375 V (*Min*)
 - ii) Cable length — 152·4 cm
- b) Voltage Rating
 - i) At sea level 500 V rms (*Max*)
 - ii) At low air pressure — 125 V rms (*Max*)
- c) Characteristic Impedance — See Table 1
- d) Frequency Range — DC to 4 GHz
- e) VSWR — 1·15 (*Max*) at DC to 4 GHz for 50 Ω connectors applicable to professional grade, 1·3 (*Max*) at DC to 4 GHz for 50 Ω connectors applicable to consumer grade, and 0·03 (*Max*) to DC to 4 GHz for 75 Ω connectors
- f) RF Leakage — 55 db *Min* at frequencies between 2 and 3 GHz. Applicable for 50 Ω connectors only.
- g) RI Insertion Loss — 0·2 db at 3 GHz for 50 Ω connectors
- h) RF Voltage Proof
 - i) Voltage and frequency — 1 000 V rms at 5 to 7·5 MHz
 - ii) Leakage Current — Not applicable

9. Tests — See 8 of IS : 11075 (Part 1)-1984

10. Marking — See 5 of IS : 11075 (Part 1)-1984

EXPLANATORY NOTE

This standard is based on JSS 52401 (Feb 1975) 'Detail specification for connectors, radio Frequency, Series BNC, TNC and UHF. The type of connectors covered in this standard are equivalent to Pattern JSS 52401/01.